priate anticoagulation are recognised, but full implementation can be difficult and costly. Therefore the development of models such as this can support the planning process allowing stakeholders to discuss how best they can reach the target of full implementation. The model is flexible and can be adapted to suit different payers.

PCV48

COST EFFECTIVENESS ANALYSIS OF MITRACLIP IN MITRAL REGURGITATION FOR HIGH RISK PATIENTS

Jamet N[1], Bourguignon S[1], Marque S[2]

[1]*Stratégique Santé, Evry, France,* [2]*Capionis, Paris, France*

OBJECTIVES: Mitral Regurgitation (MR) is a cardiac disease resulting in backflow of blood from the left ventricle to the left atrium which could increase the risk of heart failure and mortality. Half of severe MR patients are not considered eligible to surgery (valve repair or replacement) and receive a medical treatment. MR patient management could benefit from usage of Mitraclip, a transcatheter device, which enables percutaneous edge-to-edge repair to treat MR. The cost-effectiveness model presented here compares Mitraclip therapy versus medical standard care treatment. **METHODS:** A four-state Markov model (Death, MR grade 0, MR grade I /II, MR grade III/ IV) has been developed. In each state patients could be hospitalized or not. A national payer's perspective was chosen with a 5 year time horizon. Primary and secondary endpoints were respectively the number of deaths and of hospitalizations avoided. Data were obtained from the EVEREST II high-risk study and from french cost analysis. **RESULTS:** Within the time horizon analyzed, 276 further deaths could be avoided by using Mitraclip strategy out of 1000 patients with MR, compared to medical treatment. The Incremental Cost Effectiveness Ratio (ICER) is estimated at €93,000 per death averted with cumulative cost on five years. Sensitivity analysis shows that the cost of the initial surgery and the cost of the device where the two most sensitive variables. Costs of managing MR are higher for the Mitraclip option during the first year (€29,894 for Mitraclip compared to €8,557 for medical treatment) option due to the cost of the device and surgery, whereas this is inversed from the second year onwards (€8,557 for the medical option vs. €3,122 for Mitraclip). Therefore, an average ICER (20 720€ per death averted) has also been calculated. **CONCLUSIONS:** Mitraclip might represent a new economically attractive treatment option for MR patients at high-risk which increases survival.

PCV49

COST-EFFECTIVENESS AND BUDGET IMPACT ANALYSES OF RISK STRATIFICATION OF PATIENTS WITH MODERATE RISK OF CARDIOVASCULAR EVENTS USING LP-PLA2 TESTING

Rinde H[1], Genser B[2], Sonntag D[2], Kleber ME[2], Stojakovic T[3], Scharnagl H[3], Maerz W[4]

[1]*BioBridge Strategies, Binningen, Switzerland,* [2]*Mannheim Institue of Public Health, Social and Preventive Medicine, Mannheim, Germany,* [3]*Medical University of Graz, Graz, Austria,* [4]*Medizinische Fakultät Mannheim der Universität Heidelberg, Mannheim, Germany*

OBJECTIVES: 1) Analyze whether a testing strategy using the biomarker Lp-PLA$_2$would improve clinical and economic outcomes vs. ESC-SCORE alone in Germany for 50-70 year-olds. 2) Evaluate the potential budget impact for payers. **METHODS:** To decide the treatment strategy for patients with moderate risk for cardiovascular events is a challenge. They would usually not receive statin treatment in Germany. For further risk stratification there is a need to identify patients with vulnerable plaques. When an arterial plaque becomes unstable Lp-PLA$_2$is released, which indicate that these patients could benefit from treatment to prevent future cardiovascular events. An integrated cost-effectiveness and budget impact model was constructed. Lp-PLA$_2$increased the adjusted risk for CVD events in the moderate ESC-SCORE population by >2 fold in the German LURIC Study Cohort (HR 2.23,95% CI 1.15-4.32; P= 0.018). Efficacy of statin treatment relevant costs were obtained from literature. A range of sensitivity analyses were performed. **RESULTS:** The cost-effectiveness and the budget impact analyses used a theoretical population of 1 million, of which 14% were 50-70 year olds with moderate cardiovascular risk. The total 10-year discounted and adherence adjusted net cost savings from implementing the Lp-PLA$_2$ testing strategy was €19 million, or €156 per Lp-PLA$_2$tested patient. The 10-year accumulated number of deaths averted by the Lp-PLA$_2$ testing strategy was 611, or 17 incremental discounted life-days and 2.2 incremental discounted event-free life-months per Lp-PLA$_2$tested patient. Projected to whole of Germany's population aged 50-70 the potential annual discounted savings from the Lp-PLA$_2$testing strategy would be €180 million. The potential number of deaths averted per year would be 5,030. **CONCLUSIONS:** Our results indicate that the Lp-LPA$_2$ testing strategy is both cost saving and provide reduction in mortality and morbidity. The implementation of Lp-LPA$_2$ testing strategy should be considered in Germany.

PCV50

COMPARING ACTUAL PATIENT LEVEL HOSPITAL COSTS TO THE CANADIAN CMG+ COSTING ESTIMATES FOR ACUTE MYOCARDIAL INFARCTION

Chu F[1], Ohinmaa A[1], Jacobs P[2], Zheng Y[2], Kaul P[1]

[1]*University of Alberta, Edmonton, AB, Canada,* [2]*Institute of Health Economics, Edmonton, AB, Canada*

OBJECTIVES: This study compares differences in actual hospital costs and Case Mixed Group (CMG+) costs (Canadian version of the Diagnosis Related Group), for patients with acute myocardial infarction (AMI) in Edmonton, Alberta. **METHODS:** New AMI (ICD-10 code I21) patients (no AMI hospitalization within one year) hospitalized in Edmonton area hospitals between April 1,2006 and March 30,2009 were segmented into CMG+ categories by the Canadian Institute for Health Information. The differences between actual hospital cost and CMG+ cost were analyzed by comparing the mean and median differences between costs for each patient and trimming out 5% of high and low cost patients and excluding patients with longer than 90 days of hospitalization. 15 comorbidities were derived from secondary diagnostic codes and regressed against CMG+ costs and actual costs independently. The coefficients between the two separate regressions are then tested for statistical equivalence using the Wald test. **RESULTS:** The data included 4,734 new AMI patients, and after excluding the outliers and longer than 90 days LOS, the data included 3,428 patients. The estimated mean difference using the average CMG+ estimate for the whole hospital episode costs were about $500 higher than actual costs. The median CMG+ cost were most accurate estimates for per diem costs, which was about $20 higher than actual cost. 2 comorbidities were dropped from the regression due to multicollinearity. Using average CMG+ estimate for whole hospital episode costs, 10/13 comorbidity coefficients were found to be statistically equivalent to the coefficients in a separate regression using actual cost. **CONCLUSIONS:** This study shows that various derivations of costing proxies using the CMG+ methodology produce relatively accurate cost estimates for AMI patients when actual cost are not available. Based on the available patient data and the context of use of the cost estimates, different methods will be optimal.

PCV51

COST ESTIMATION OF HOME BLOOD PRESSURE MONITORING VERSUS COMBINED OFFICE AND AMBULATORY MEASUREMENTS IN HYPERTENSION MANAGEMENT

Bouboucha iropoulou N[1], Karpettas N[2], Athanasakis K[1], Kollias A[2], Protogerou AD[3], Achimastos A[2], Stergiou GS[2]

[1]*National School of Public Health, Athens, Greece,* [2]*Sotiria Hospital, Athens, Greece,* [3]*Laiko Hospital, Athens, Greece*

OBJECTIVES: Hypertension is a chronic condition, directly linked to cardiovascular diseases. Therefore, the monitoring of blood pressure (BP) is of utmost importance in order to avoid BP-related adverse clinical outcomes. This study aimed at comparing the health resources consumed and the subsequent costs for hypertension management using home blood pressure monitoring alone (HBPM) vs combined office measurements and ambulatory blood pressure monitoring (C/ABPM). **METHODS:** A total of 116 previously untreated, hypertensive subjects were randomized to use either HBPM or C/ABPM for antihypertensive treatment initiation and titration. The analysis involved all health resources (BP measurements/outpatient visits, laboratory and other tests, pharmaceutical therapy) utilized within 12-months follow up, their respective costs, and efficacy (hypertension control). A 5-year projection was applied assuming (a) continuation of stable treatment as in the end of first year (for both arms), (b) single ABPM/year in C/ABPM group, (c) 2 visits/year in HBPM group and 3 in ABPM. **RESULTS:** The total cost of hypertension management regardless of BP measurement method was calculated at 1,404.8€/patient (laboratory tests: 50.4%, BP measurements+outpatient visits: 32.4%, pharmaceuticals: 17.1%). In HBPM group, total cost was 1,336.0€/patient vs 1,473.5€/patient in C/ABPM group (p<0.001). Findings suggested that the cost of treatment did not differ between the two groups (233.1 vs 247.6€/patient respectively, p=NS), while BP measurements+outpatient visits were estimated at 393.9€/patient in HBPM arm and 516.9€/patient in C/ABPM arm (p<0.001). For subsequent years (>1), expenditures were estimated at 348.9€/patient for HBPM vs 440.2€/patient for C/ABPM group (p<0.001), whereas for a 5-year projection, 2,731.4€/patient and 3,234.3€/patient respectively (p<0.001). **CONCLUSIONS:** C/ABPM strategy presented a higher first year cost compared to HBPM, while the same trend was unveiled in 5-year projection. Effective hypertension management through the appropriate strategies is of paramount importance considering its high prevalence; ergo, even small differences in the cost of applying them could have substantial impact on health expenditures.

PCV52

THE COST COMPARISON OF DRUG-ELUTING STENTS (DES) AND BARE-METAL STENTS (BMS) - A RETROSPECTIVE COHORT MATCHED STUDY

Lang HC[1], Chen TC[1], Chen CH[2]

[1]*National Yang-Ming University, Taipei, Taiwan,* [2]*Taipei Veterans General Hospital, Taipei, Taiwan*

OBJECTIVES: Literature has failed to demonstrate the clear superiority of Drug-Eluting Stenting (DES) for stable coronary artery diseases on survival as compared to the bare-metal stenting (BMS). This study aimed to compare the health care utilization and the costs between drug-eluting stenting (DES) and bare-metal stenting (BMS). We also examined factors that influenced cumulative costs of these two groups. **METHODS:** We conducted a retrospective cohort study based on the NHI program. Patients who had coronary stenting between Jan. 2007 and Dec. 2008 were recruited and followed through the end of 2010. Both groups were matched on 2: 1 by propensity score which adjusted sex, age, stent number and Charlson comorbidity index (CCI). We estimated cumulative medical cost for these two matched group by conducting the Kaplan-Meier Sample Average (KMSA) estimates. Regression analysis was used to explore the predictors of cost. **RESULTS:** The mean age in both groups was around 66 years. After propensity score matching, we had a total of 966 patients; 644 in BMS group and 322 in DES group. KMSA estimates (discounted 3.5%) showed that DES group had a higher 3-year cumulative total outpatient cost at US$ 6,867 and heart related outpatient cost at US$ 2,548 as compared to BMS group, which were US$7,668 and US$ 3,302 respectively (1US$= 30 NTD). The heart related inpatient cost was similar between two groups. The significant predictors of heart-related outpatient costs were stent type, premium and CCI. The predictors of heart-related inpatient costs were stent type, stent number, CCI and procedure for acute coronary syndrome (ACS). **CONCLUSIONS:** In Taiwan, NHI reimburses DES and BMS at the same price, and hospitals can balance billing for the DES. We found that even after adding the extra national average out-of-pocket payment to DES, DES still was a cost-effective procedure.

PCV53

GOAL DIRECTED PERFUSION (GDP): A DIFFERENTIAL COST ANALYSIS IN UK AND US

Povero M, Pradelli L

AdRes HE&OR, Turin, Italy

OBJECTIVES: High oxygen delivery (DO2) during cardiopulmonary bypass (CPB) is associated with better renal outcome in cardiac surgery. Traditional perfusion (TP) techniques, targeted on body surface area and CPB temperature, achieves high DO2 in about 50% of the cases while a goal directed perfusion (GDP) approach can lead to more than 90% of cases achieving high DO2 with a consequent reduction

in Acute Kidney Injury (AKI) rate of about 40%. Aim of this study is to perform an economic evaluation of GDP strategy with respect to TP in UK and US. **METHODS:** A Discrete Event Simulation model was developed to compare TP and GDP strategy in patients undergoing CPB. The patient's pathways from operation to discharging from hospital was simulated: AKI incidence, in-hospital mortality, hospital length of stay, transfusions were correlated to probability to achieve high DO2 target using published correlations. National perspective was adopted to calculate costs associated to each event while GDP strategy was exploited considering card and data management system (DMS) cost per patient. **RESULTS:** GDP strategy saved more than 3 days in hospital and 11% of AKI episodes. The cost-saving is 2,821 £ in UK and 3,206 $ in US; the cost of card and DMS (79 £ in UK, 110 $ in US) is completely offset by savings in hospital stay that result the main driver in cost (2,886 £ in UK, 3,222 $ in US). Deterministic sensitivity analysis shows that the total savings are mainly influenced by hospital LOS, cost per day both in ICU and in ward, and nadir haematocrit during CPB. **CONCLUSIONS:** GDP seems to improve significantly the main outcomes related to CPB surgery, when compared to TP techniques. Additional costs due to perform GDP strategy have no impact on the total cost since completely offset by the savings in hospital cost.

PCV54

CAN A CVD POLYPILL SAVE MONEY IN THE 'REAL WORLD'?

Laba TL[1], Hayes A[2], Jan S[1], Rodgers A[1], Patel A[1], Cass A[3], Reid C[4], Tonkin A[4], Usherwood T[2], Webster R[1]

[1]*George Institute for Global Health, University of Sydney, Camperdown, Australia,* [2]*University of Sydney, Camperdown, Australia,* [3]*Menzies School of Health Research, Darwin, Australia,* [4]*Monash University, Melbourne, Australia*

OBJECTIVES: The use of polypills in the prevention of cardiovascular disease is mooted to reduce costs compared with current practice, yet there is very little prospectively-collected data to support this claim. The present study compares the 'real-world' costs of a polypill strategy against usual care among Australians with established cardiovascular disease or at high estimated cardiovascular risk. **METHODS:** A 'within trial' cost analysis from the Australian health system perspective of polypill-based care versus usual care with separate medications was conducted using data from the pragmatic randomised controlled trial Kanyini Guidelines Adherence to Polypill (Kanyini GAP) and linked health service and medication claims data. The primary outcome, estimated with generalised linear models, was mean health service and pharmaceutical expenditure, per patient per year. All costs during the trial, conducted from 2008-2012, were inflated to $AUD 2012 prices. **RESULTS:** A statistically significantly lower mean pharmaceutical expenditure of $989 (95%CI 648 to 1331) per patient per year in the polypill arm compared to usual care (P<0.001, adjusted, excluding polypill cost). No significant differences were observed in annual non-hospital health service expenditure ($40, 95%CI -202 to 281 per patient). **CONCLUSIONS:** This study provides evidence that a cardiovascular disease polypill strategy has the potential to produce significant cost-savings to health systems. At an estimated reimbursement cost of $1 per day for the polypill, these savings would have amounted to over $600 per patient per year. Cost-savings would accrue to patients also, given fewer prescription charges. Linking health service and medication claims data with data from a pragmatic randomised controlled trial has provided an avenue to assess the real-world cost implications of introducing this new technology into clinical practice.

PCV55

STUDY OF COSTS OF THE CARDIAC AND DIABETES MELLITUS PATIENT IN A CARDIOLOGY HOSPITAL OF HIGH COMPLEXITY

Costa MGSD[1], Santos MS[2], Tura BR[2], Goulart MC[2], Cintra MACT[2], Senna KMS[1]

[1]*INC, Rio de Janeiro, Brazil,* [2]*National Institute of Cardiology, Rio de Janeiro, Brazil*

OBJECTIVES: There is a growing prevalence of diabetes mellitus (DM) among chronic diseases in the world. Currently there are over 135 million people with diabetes worldwide with estimates reaching 300 million in 2025. Developing countries concentrate two thirds of these patients and it is known that the economic burden of chronic diseases generate high costs for the health system and social welfare as a function of mortality and premature disability. The objective of the study was to investigate the impact on hospital costs of treating a patient with ischemic heart disease and DM, compared with cardiac patients without DM, in a cardiology hospital of high complexity Ministry of Health in Brazil. **METHODS:** observational study of historical cohort of 421 diabetic heart disease (CD) and non diabetic (CND), from January 2009 to March 2010 in cardiology hospital of high complexity of the Unified Health System (SUS) in Brazil. Were only covered the direct medical costs of hospitalizations. The costs of the study population (CD and CND) were grouped into surgery, and clinical treatment obtained by two different approaches (top-down and bottom-up estimates), and subsequently analyzed and compared using R software version 3.0. **RESULTS:** No differences between groups were observed. Cost of surgery: CND = U. S. $ 2937.55 and U. S. $ 3024.51 = CD (p = 0.319). Medical Treatment: CND = U. S. $ 685.09 and U. S. $ 304.11 = CD (p = 0.218). Values are expressed as medians. **CONCLUSIONS:** studies analyzing these conditions separately describe high expenses resulting from the treatment of diabetes and cardiovascular disease. We can infer from the results of this study that the diabetic patient cardiac does not generate a significant financial impact for a cardiology hospital of high complexity.

PCV56

A COST COMPARISON ANALYSIS OF MEDTRONIC'S STENT GRAFT SYSTEM TO COMPETITION FOR ENDOVASCULAR ANEURYSM REPAIR FOR ABDOMINAL AORTIC ANEURYSMS

Mallow PJ[1], Baniewicz J[2], Williams JM[2], Au-Yeung A[2]

[1]*CTI Clinical Trial and Consulting, Cincinnati, OH, USA,* [2]*Medtronic, Inc, Mounds View, MN, USA*

OBJECTIVES: To perform a cost comparison analysis of Medtronic's current stent graft system compared to currently competing stent graft systems for endovascular aneurysm repair (EVAR) of abdominal aortic aneurysms (AAA). **METHODS:** A simulation model was constructed using Microsoft Excel. The perspective of the model was a hospital in the United States (US). Clinical data was obtained from US pivotal studies for the Medtronic stent system and the competing stent systems. The competition arm (Competition) was created by pooling the pivotal study data for the current stent systems manufactured by Gore, Endologix, and Cook. Cost data was obtained from the Premier database (2011-2012) and augmented with the published literature. All costs were adjusted to 2013 dollars. The model estimated the costs associated with the following utilization outcomes: procedure time, transfusion rate, intensive care unit (ICU) length of stay (LOS), and general ward LOS. The following adverse events were considered: myocardial infarction, respiratory failure, acute renal failure, stroke/TIA, and second endovascular procedure within 12 months of the initial procedure. Sensitivity analysis was performed to assess the impact of imputed data, and one-way sensitivity analysis was performed for each parameter. **RESULTS:** The expected costs for a hospital related to the above utilization and adverse event were $8,463 for Medtronic's stent graft system and $11,380 for the Competition. Fifty-six percent of the $2,917 difference was attributable to improved utilization associated with Medtronic's stent graft compared to the Competition. Adverse events and secondary endovascular procedures accounted for 25% and 19% of the difference, respectively. These results were robust to alternative sensitivity analyses. **CONCLUSIONS:** This analysis suggested that Medtronic's current stent graft is associated with cost savings compared to Competition for the above parameters. Future research is necessary to examine if these results are maintained based upon a head-to-head clinical study of EVAR stent systems.

PCV57

HOSPITALIZATIONS AND COSTS IN PATIENTS WITH IMPLANTABLE CARDIOVERTER DEFIBRILLATORS: ASSOCIATION OF LONG VERSUS STANDARD DETECTION INTERVALS

Borghetti F[1], Proclemer A[2], Arenal A[3], Kloppe A[4], Lunati M[5], Ferrer JBM[6], Hersi A[7], Gulaj M[8], Wijffels MCEF[9], Santi E[10], Manotta L[11], Beccagutti G[1], Campo C[11], Gasparini M[12]

[1]*Medtronic Italia, Sesto San Giovanni (MI), Italy,* [2]*Azienda Ospedaliero Universitaria S. Maria della Misericordia, Udine, Italy,* [3]*Hospital General Universitario Gregorio Marañón, Madrid, Spain,* [4]*Berufsgenossenschaftliches Universitätsklinikum Bergmannsheil, Bochum, Germany,* [5]*Azienda Ospedaliera Niguarda Ca' Granda, Milano, Italy,* [6]*Hospital de Txagorritxu, Vitoria (Álava), Spain,* [7]*College of Medicine, King Saud University, Riyadh, Saudi Arabia,* [8]*MSWiA Hospital, Bialystok, Poland,* [9]*St. Antonius Ziekenhuis Hospital, Nieuwegein, The Netherlands,* [10]*MEDTRONIC Clinical Research Institute, Roma, Italy,* [11]*MEDTRONIC Clinical Research Institute, Sesto S. Giovanni, Italy,* [12]*Humanitas Research Hospital, IRCCS, Rozzano (MI), Italy*

OBJECTIVES: ADVANCEIII trial showed that a long detection programming reduces all delivered therapies as well as inappropriate shocks in patients implanted with implantable cardioverter defibrillator (ICD). The purpose of this Advance III secondary analysis was to assess the impact of long detection on hospitalizations (H), length of stay (LOS) and associated costs for the health care system. **METHODS:** 1902 patients enrolled in the ADVANCEIII Trial: 948 patients randomized to long detection (NID 30/40) and 954 to short setting (NID 18/24). All hospitalizations were reviewed and classified according to ICD9CM codes and, consequently, to the corresponding Diagnosis-Related Groups (DRGs). Costs correspond to the specific public tariffs for the DRGs applied. The prospective was of a single-payer agent (Italian Ministry of Health). **RESULTS:** Over a median period of 12 months, rates of overall and cardiovascular hospitalizations (CV) were lower in the long detection group (43.8*100 pts/years (39.6-48.4) vs 52.3*100 pts/years (47.7-57.3), IRR: 0.84 (0.73-0.96) p=0.005,32.7*100 pts/years (29.1-36.7) vs 40.3*100 pts/years (36.2-44.6), IRR (95% CI): 0.81 (0.69-0.95) p=0.004 respectively). Patients programmed with a long detection had shorter LOS (overall H: 407days (394-421) vs 470 days (456-484), IRR: 0.87 (0.83-0.91) p<0.001; CV: 298 days (287-309) vs 368 days (356-381), IRR: 0.81 (0.77-0.85) p<0.001) and lower mean hospital cost per patient-year compared with patients with nominal programming (overall H: 1.311 € (1.309 € - 1.314 €) versus 1.528€ (1.525€ - 1.530€) IRR: 0.86 (0.86-0.86) p<0.001; CV: 1.100 € (1.098 € - 1.103 €) versus 1.339 € (1.337 € - 1.342 €) IRR: 0.86 (0.86-0.86) p<0.001). **CONCLUSIONS:** A long detection window was associated with a reduction in hospitalization rates, total length of stay and cost per patients both for all-causes and cardiovascular related events.

PCV58

ECONOMICS AND CLINICAL EVALUATION OF ENDOVASCULAR AND SURGICAL TREATMENT OF PATIENTS WITH DISABILITY OF SUPERFICIAL FEMORAL ARTERY

Kamensky V, Ivlev I

Czech Technical University in Prague, Kladno, Czech Republic

OBJECTIVES: The rising cost of treatment of peripheral arterial disease and the growing incidence of this disease led to economic analysis of arterial disease. With the increasing price of modern instrumentation, it is appropriate to evaluate not only clinical efficiency, but also intervention economics. This study aims to create a recommendation for choosing the most effective treatment based on both economic data and clinical outputs of the disabled superficial femoral artery. **METHODS:** The methods chosen were reviewed from clinical outputs for treatment effectiveness, multiple-criteria decision-making for the synthesis of treatment effects, analysis of costs at the selected interventions and cost-effectiveness analysis. **RESULTS:** The four clinical outputs used in the study as a criterion by the research of the clinical studies were primary patency, technical success, patient survival and limb salvage at the year of operation. The weights of each criterion, and the preferences of the interventions were counted. The sequence of interventions was set by the AHP method: PTA (35.6%), PTA/S (33.9%) and bypass (30.6%) and method of weighted sum: PTA/S (56%), bypass (55%) and PTA (42%). From the view of both health insurance payer and health care provider, where the direct medical expenditures were included, the order of intervention was the same: PTA, bypass and PTA/S. The cost-effectiveness was calculated for both, and the PTA intervention achieved the best results. Incremental expenditures by unit of effect was calculated for each effect: ICER or the domination of one intervention over another was set. Ratio of the ICER was generally higher for PTA/S compared to bypass. In the sensitive analysis was determined the influence of